

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

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REMARKS

The Office action has been carefully considered. Claims 1-5, 7-10, 15-16, 22-26, 31, 35-39, 41, 43-49, and 51 were rejected under 35 U.S.C. § 102(b) as being anticipated by Quatrani, "Visual Modeling with Rational Rose and UML", Addison-Wesley, 3rd Printing, April, 1998 (hereinafter "Quatrani"). Claims 6, 40, and 50 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Hemzal, U.S. Patent No. 6,542,595 (hereinafter "Hemzal"). Claims 11-14, 21, 27-30, and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Battat et al., U.S. Patent No. 5,958,012 (hereinafter "Battat"). Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Chui, U.S. Patent No. 6,041,143 (hereinafter "Chui"). Claims 18, 20, and 32-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Scarborough, U.S. Patent No. 6,353,448 (hereinafter "Scarborough"). Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Gudmundson, U.S. Patent No. 5,907,704 (hereinafter "Gudmundson"). Claim 42 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Bacon, U.S. Patent No. 6,430,538 (hereinafter "Bacon").

Applicants thank the Examiner for the interview held (by telephone) on November 4, 2004 regarding the Final Office action dated 10/06/2004. During the interview, the Examiner and applicants' attorney discussed the status of the application as well as the background section of the application and independent claims 1, 4, 37, 39, 45, and 48 with respect to the prior art and enablement. Applicants thank the Examiner for removal of the Final status of the Office action dated 10/06/2004 based on the removal of

In re Application of RAJARANJAN, et al.
Serial No. 09/742,761

BEST AVAILABLE COPY

the Sobeski patent (US Patent No. 6,499,035) under 35 U.S.C. § 103(c). The essence of applicants' position is incorporated in the remarks below.

Applicants submit that the claims 1-51 as initially presented were in acceptable form. Independent claims 1, 4, 37, 39, 45, and 48 have been amended to more particularly point out and distinctly claim the invention. Applicants further submit that the claims as filed were patentable over the prior art of record, and that the amendments herein are for purposes of clarifying the claims and/or for expediting allowance of the claims, and not for reasons related to patentability. Reconsideration is respectfully requested.

Turning to the 35 U.S.C. § 102(b) rejections, the present invention generally relates to providing a method and system that logically separate the notation (e.g., visual representation such as an icon, image or shape, e.g., circle, a triangle or a line) of a model element object, from the semantics of that notation, (e.g., what the notation represents or means in its current environment). The present invention, implemented in a Visual Modeling Framework (VMF), separates these two logical concepts into separate code components, whereby various notations and semantics from different providers may be combined. VMF defines the API set/interfaces to which pluggable semantic and notation objects conform, and allows a notation and a semantic to be plugged into or otherwise associated with each other to create a model element, thereby allowing pluggable notations. VMF also allows pluggable semantics, e.g., to enable UML notations to be used to design a complex software diagram, yet switch between 'Semantic' objects for Visual Basic and 'Semantic' objects in C++. Note that the above description is for informational and example purposes only, and should not be used to interpret the claims, which are discussed below.

BEST AVAILABLE COPY

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

Quatrani, on the other hand, does not distinguish semantics from notations, but instead defines a notation as "providing semantics that are rich enough to capture all important strategic and tactical decisions." Quatrani, Chapter 1, pg 4. In Quatrani, semantics are an integral component of notations. Quatrani, Chapter 1, pg 4. Significantly, Quatrani does not disclose separately providing semantics independent of notations as recited by applicants. Nor does Quatrani disclose or suggest a semantic data structure separate of a notation data structure. Rather, Quatrani is directed to utilizing notations including semantics. Indeed, if anything, Quatrani *teaches away* from the use of separately providing semantics independent of notations as Quatrani discloses semantics are an integral component of notations. The use of separately providing semantics independent of notations is far different from using notations including semantics.

Anticipation under 35 U.S.C. § 102(b) requires the disclosure in a single prior art reference of each and every element of the claim under consideration, and each element must be arranged as in the claim. Quatrani does not teach or suggest, as in independent claim 1, providing a plurality of notations that each comprise a visual representation of a model element, providing a plurality of semantics separate from each notation and that each comprise a meaning in a modeling environment of a model element, and associating a selected notation with a selected semantic to provide a model element having a visual representation and a meaning in a modeling environment.

For at least the above reasons, Quatrani fails to meet the requirements for supporting a 35 U.S.C. § 102(b) rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claim 1 based on Quatrani. Similarly, Quatrani does not teach or suggest the limitations present in claims 2-3 when analyzed in

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

BEST AVAILABLE COPY

light of the use of separately provided semantics independent of notations. Therefore, claim 1 and the claims that depend thereon are patentable over the cited art.

Turning to the rejection of independent claim 4 of the present invention, Quatrani does not teach or suggest a notation data structure having a set of at least one interface for accessing a plurality of methods therein, and a semantic data structure separate from the notation data structure and having a set of at least one interface for accessing a plurality of methods therein and the semantic data structure being associated with the notation data structure to provide a model element. Significantly, Quatrani does not disclose separately providing a notation data structure independent of a semantic data structure as recited by applicants. Nor does Quatrani disclose the semantic data structure separate from the notation data structure and being associated with the notation data structure to provide a model element. Rather, in Quatrani, semantics are an integral component of notations.

For at least the above reasons, Quatrani fails to meet the requirements for supporting a 35 U.S.C. §102(b) rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claim 4 based on Quatrani. Similarly, Quatrani does not teach or suggest the limitations present in claims 5, 7-10, 15-16, 22-26, 31, and 35-36 when analyzed in light of the use of a semantic data structure separate from a notation data structure. Therefore, claim 4 and the claims that depend thereon are patentable over the cited art.

Turning to the rejection of independent claim 37 of the present invention, Quatrani does not teach or suggest a system including a notation that includes an interface configured to provide access to methods therein and comprising a representation of a model element in at least one modeling environment, a semantic separate from the notation that includes an

BEST AVAILABLE COPY

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

interface configured to provide access to methods therein and comprising a meaning of a model element in at least one modeling environment, and a paradigm server connected to a modeling environment and configured to access the methods of the notation and the methods of the semantic via their respective interfaces, and further configured to enable a determination as to whether the paradigm server, notation and semantic are each compatible, and if they are compatible, to associate the notation with the semantic to provide a model element in the modeling environment. Significantly, Quatrani does not disclose separately providing a notation independent of a semantic as recited by applicants. Nor does Quatrani disclose the semantic separate from the notation and being associated with the notation to provide a model element. Rather, in Quatrani, semantics are an integral component of notations.

For at least the above reasons, Quatrani fails to meet the requirements for supporting a 35 U.S.C. §102(b) rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claim 37 based on Quatrani. Similarly, Quatrani does not teach or suggest the limitations present in claim 38 when analyzed in light of the use of separately provided semantics separate from notations and a paradigm server configured to access the methods of the notation and the methods of the semantic to enable a determination as to whether the paradigm server, notation and semantic are each compatible, and if they are compatible, to associate the notation with the semantic to provide a model element in the modeling environment. Therefore, claim 37 and the claim that depends thereon are patentable over the cited art.

Turning to the rejection of independent claim 39 of the present invention, Quatrani does not teach or suggest selecting a selected notation from a plurality of notations

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

BEST AVAILABLE COPY

comprising a visual representation of a model element, selecting a selected semantic from plurality of semantics that are separate from each notation and comprising a meaning in a modeling environment of a model element, and validating whether the selected notation can be associated with the selected semantic. Significantly, Quatrani does not disclose separately providing a plurality of semantics that are separate from each notation as recited by applicants. Rather, in Quatrani, semantics are an integral component of notations.

For at least the above reasons, Quatrani fails to meet the requirements for supporting a 35 U.S.C. §102(b) rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claim 39 based on Quatrani. Similarly, Quatrani does not teach or suggest the limitations present in claim 40-44 when analyzed in light of the use of separately selected semantics that are separate from each notation and validating whether the selected notation can be associated with the selected semantic.

Turning to the rejection of independent claim 45 of the present invention, Quatrani does not teach or suggest providing a plurality of notations from at least a first provider with each notation comprising a visual representation of a model element, providing a plurality of semantics from at least a second provider with each semantic separate from each notation and comprising a meaning in a modeling environment of a model element, and associating a selected notation from the at least first provider with a selected semantic from the at least second provider to provide a model element having a visual representation and a meaning in a modeling environment. Significantly, Quatrani does not disclose separately providing a plurality of semantics that are separate from each notation as recited by applicants. Rather, in Quatrani, semantics are an integral component of notations.

BEST AVAILABLE COPY

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

For at least the above reasons, Quatrani fails to meet the requirements for supporting a 35 U.S.C. §102(b) rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claim 45 based on Quatrani. Similarly, Quatrani does not teach or suggest the limitations present in claims 46 and 47 when analyzed in light of the use of separately provided semantics independent of notations. Therefore, claim 45 and the claims that depend thereon are patentable over the cited art.

Turning to the rejection of independent claim 48 of the present invention, Quatrani does not teach or suggest providing a notation data structure from at least a first provider having a set of at least one interface for accessing a plurality of methods therein, and a semantic data structure from at least a second provider where the semantic data structure is separate from the notation data structure and has a set of at least one interface for accessing a plurality of methods therein and the semantic data structure from the at least second provider is being associated with the notation data structure from the at least first provider to provide a model element. Significantly, Quatrani does not disclose separately providing a notation data structure independent of a semantic data structure as recited by applicants. Nor does Quatrani disclose the semantic data structure separate from the notation data structure and being associated with the notation data structure to provide a model element. Rather, in Quatrani, semantics are an integral component of notations.

For at least the above reasons, Quatrani fails to meet the requirements for supporting a 35 U.S.C. §102(b) rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claim 48 based on Quatrani. Similarly, Quatrani does not teach or suggest the limitations present in claims 49-51 when analyzed in

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

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light of the use of the semantic data structure separate from the notation data structure.

Therefore, claim 48 and the claims that depend thereon are patentable over the cited art.

Regarding the 35 U.S.C. § 103(a) rejections, by law, in order to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In addition, "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Further, if prior art, in any material respect teaches away from the claimed invention, the art cannot be used to support an obviousness rejection. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed Cir. 1997).

Turning to the rejection of dependent claims 6, 40, and 50 of the present invention, the Office action rejected claims 6, 40, and 50 under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Hemzal. Applicants respectfully submit that the rejection of claims 6, 40, and 50 is improper. Claim 6 depends from independent claim 4. For the reasons stated above with reference to claim 4, Quatrani does not disclose, teach, or even suggest the limitation of claim 4. Furthermore, as argued above, Quatrani actually *teaches away* from the limitations of claim 4, and therefore, Quatrani cannot be properly combined with Hemzal to reject claim 6 under 35 U.S.C. § 103(a). Claim 40 depends from independent claim 39. For the reasons stated above with reference to claim 39, Quatrani does not disclose, teach, or even suggest the limitation of claim 39. Furthermore, Quatrani actually *teaches away* from the limitations of claim 39, and therefore, Quatrani cannot be properly combined with Hemzal to reject claim 40 under 35 U.S.C. § 103(a). Claim 50 depends from independent claim 48. For the reasons stated above with reference to

BEST AVAILABLE COPY

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

claim 48, Quatrani does not disclose, teach, or even suggest the limitations of claim 48. Furthermore, Quatrani actually *teaches away* from the limitations of claim 48, and, therefore, Quatrani cannot be properly combined with Hemzal to reject claim 50 under 35 U.S.C. § 103(a).

Turning to the rejection of dependent claims 11-14, 21, 27-30, and 34 of the present invention, the Office action rejected claims 11-14, 21, 27-30, and 34 under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Battat. Applicants respectfully submit that the rejection of claims 11-14, 21, 27-30, and 34 is improper. Claims 11-14, 21, 27-30, and 34 depend from independent claim 4. For the reasons stated above with reference to claim 4, Quatrani does not disclose, teach, or even suggest the limitation of claim 4. Furthermore, Quatrani actually *teaches away* from the limitations of claim 4, and, therefore, Quatrani cannot be properly combined with Battat to reject claims 11-14, 21, 27-30, and 34 under 35 U.S.C. § 103(a).

Turning to the rejection of dependent claim 17 of the present invention, the Office action rejected claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Chui. Applicants respectfully submit that the rejection of claim 17 is improper. Claim 17 depends from independent claim 4. For the reasons stated above with reference to claim 4, Quatrani does not disclose, teach, or even suggest the limitation of claim 4. Furthermore, Quatrani actually *teaches away* from the limitations of claim 4, and, therefore, Quatrani cannot be properly combined with Chui to reject claim 19 under 35 U.S.C. § 103(a).

Turning to the rejection of dependent claims 18, 20, and 32-33 of the present invention, the Office action rejected claims 18, 20, and 32-33 under 35 U.S.C. § 103(a) as

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

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being unpatentable over Quatrani in view of Scarborough. Applicants respectfully submit that the rejection of claims 18, 20, and 32-33 is improper. Claims 18, 20, and 32-33 depend from independent claim 4. For the reasons stated above with reference to claim 4, Quatrani does not disclose, teach, or even suggest the limitation of claim 4. Furthermore, Quatrani actually *teaches away* from the limitations of claim 4, and, therefore, Quatrani cannot be properly combined with Scarborough to reject claims 18, 20, and 32-33 under 35 U.S.C. § 103(a).

Turning to the rejection of dependent claim 19 of the present invention, the Office action rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Gudmundson. Applicants respectfully submit that the rejection of claim 19 is improper. Claim 19 depends from independent claim 4. For the reasons stated above with reference to claim 4, Quatrani does not disclose, teach, or even suggest the limitation of claim 4. Furthermore, Quatrani actually *teaches away* from the limitations of claim 4, and, therefore, Quatrani cannot be properly combined with Gudmundson to reject claim 19 under 35 U.S.C. § 103(a).

Turning to the rejection of dependent claim 42 of the present invention, the Office action rejected claim 42 under 35 U.S.C. § 103(a) as being unpatentable over Quatrani in view of Bacon. Applicants respectfully submit that the rejection of claim 42 is improper. Claim 42 depends from independent claim 39. For the reasons stated above with reference to claim 39, Quatrani does not disclose, teach, or even suggest the limitation of claim 39. Furthermore, Quatrani actually *teaches away* from the limitations of claim 39, and, therefore, Quatrani cannot be properly combined with Bacon to reject claim 42 under 35 U.S.C. § 103(a).

BEST AVAILABLE COPY

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

For at least these reasons, applicants submit that all the claims are patentable over the prior art of record. Reconsideration and withdrawal of the rejections in the Office action is respectfully requested and early allowance of this application is earnestly solicited.

In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

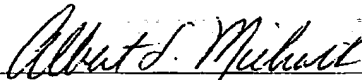
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CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that claims 1-51 are patentable over the prior art of record. Applicants also respectfully submit and that the application is in good and proper form for allowance. A favorable action on the part of the Examiner is earnestly solicited.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney at (425) 836-3030.

Respectfully submitted,



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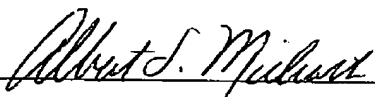
In re Application of RAJARAJAN, et al.
Serial No. 09/742,761

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Albert S. Michalik

2650 Second Amendment

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